

[0001] **METHOD AND APPARATUS FOR DETERMINING
SIGNAL-TO-INTERFERENCE RATIO WITH REDUCED BIAS EFFECT**

[0002] **CROSS REFERENCE TO RELATED APPLICATION(S)**

[0003] This application claims priority from U.S. Provisional Application No. 60/425,367, filed on November 8, 2002, which is incorporated by reference as if fully set forth.

[0004] **FIELD OF THE INVENTION**

[0005] The invention generally relates to a method and apparatus for finding the signal-to-interference ratio (SIR) in a digital communication system. More particularly, the invention relates to SIR estimation with reduced bias contribution.

[0006] **BACKGROUND**

[0007] A SIR measurement is an important metric of quality performance for digital communication systems. For wireless communication systems such as Third Generation (3G) wireless systems, SIR measurements are used in several link adaptation techniques such as transmit power control and adaptive modulation and coding. Typically, SIR measured at a receiving device is more meaningful than at a transmitting device because SIR measured at a receiving device directly reflects the quality of communicated link signals, especially in the presence of multiple access interference or multipath fading channel.

[0008] By definition, a received signal consists of a desired signal and interference. The interference may include other signals and thermal noise at the receiving end. However, the receiving device does not generally have knowledge of either signal power or interference power so that the receiving device needs to perform estimation of both signal and interference power based on received signals using a blind method. A blind method in SIR measurement for a given received signal refers to the signal power and

*Obay / invention substitute specification
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